# Physiological Lesion Assessment

## *Moscone West, 2nd Floor, Room 2000*

## Tuesday, October 29, 2013, 1:00 PM–3:15 PM

Abstract nos: 76-84

### TCT-76

**Does Age Affect Fractional Flow Reserve-Guided Percutaneous Coronary Intervention? A FAME (Fractional Flow Reserve Versus Angiography for Multivessel Evaluation) Trial Substudy**

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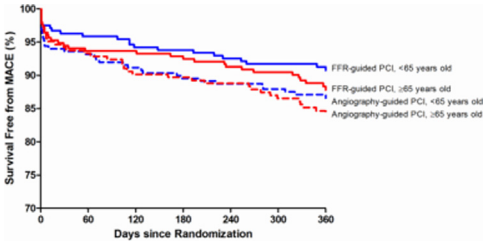
**Background:** Fractional flow reserve (FFR)-guided percutaneous coronary intervention (PCI) improves outcomes compared with an angiography-guided strategy in patients with multivessel coronary artery disease. Changes which occur in the coronary microvasculature as we age may affect the results of FFR-guided PCI in multivessel disease.
**Methods:** We analyzed the results of FFR-guided PCI in the 512 patients enrolled in the FAME study who were less than the mean age of 65 years old compared to the 493 patients ≥65 years old.
**Results:** The 1-year rate of death, myocardial infarction or repeat revascularization in the angiography-guided group tended to be higher than in the FFR-guided group for both those patients <65 (17.2% vs. 12.0%, p=0.098) and those ≥65 years old (19.7% vs. 14.3%, p=0.111) without any significant interaction based on age (p=0.920). In patients ≥65 years old, the FFR was significantly higher in vessels with 50% to 70% visual stenosis (0.83±0.11 vs. 0.80±0.13, p=0.028) and with 71% to 90% visual stenosis (0.69±0.15 vs. 0.64±0.16, p=0.002). Elderly patients had a significantly lower proportion of functionally significant lesions (FFR ≤0.80) in vessels with 71% to 90% stenosis (78.8 vs. 87.4%, p=0.011) compared to younger patients.
**Conclusions:** FFR-guided PCI is beneficial regardless of age, however, older patients have fewer functionally significant lesions, despite a similar angiographic appearance.




### TCT-77

**Safety of provocative tests to detect coronary artery spasm. Results from a French registry including 2,430 patients.**

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**Background:** The use of provocative tests (PT) to diagnose coronary artery spasm (CAS) varies largely within countries, hospitals, and physicians. PT-related complications are one of the main reasons for not performing PT to detect CAS in patients with compatible symptoms.
**Methods:** We report the incidence of complications during and immediately after PT in 2,430 patients with normal or near normal coronary arteries over the last 10 years. Methylergometrine maleate 0.4mg was injected intravenously immediately after conventional diagnostic angiography and then followed by another injection in the left and right coronary arteries 3 minutes later.
**Results:** Average patient age was 55 years (48-64) and there were more men (52.3%). Reasons for coronary angiography were non-specific chest pain at rest (62.2%), acute coronary syndrome (16.9%), angina at rest and stress (10.2%), silent ischemia (8.9%) and out-of-hospital cardiac arrest (1.8%). Overall, complications including myocardial infarction (n=1), ventricular fibrillation (n=1), asystole (n=3), atrio-ventricular block (n=2), persistent CAS (n=3), delayed CAS (n=4), transient ischemic stroke (n=4), migraine (n=2), peripheral spasm (n=1), systemic embolism (n=1), bronchospasm (n=1) were reported in 0.9% of patients. The complication rate was 0.3% in patients with a normal PT. Most of the reported complications were related to the angiography procedure rather than to PT. Patients with PT-related complications were more often hospitalized for acute coronary syndrome and more likely to have mild atheroma in coronary arteries than those with no complications (47.8% vs. 16.6%; p<0.001 and 60.9% vs. 28.1%; p<0.01; respectively).
**Conclusions:** Complications are extremely rare in selected patients with suspected CAS. The potential severe outcomes for patients with undiagnosed and untreated CAS, together with the high safety of PT, would justify a shift in paradigm towards a more systematic detection of CAS during conventional coronary angiography for patients with chest pain at rest.

### TCT-78

**Abstract Withdrawn**

### TCT-79

**Reclassification of Coronary Revascularization Strategy With Fractional Flow Reserve (FFR) at time of diagnostic angiography: Insights from a Large French Multicenter FFR Registry (R3F)**

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**Background:** Fractional flow reserve (FFR) is useful in patients preselected for coronary revascularization. There is no large report of its impact on the decision of coronary revascularization on individual patients referred for diagnostic angiography.
**Methods:** The R3F registry investigated 1,075 consecutive patients undergoing diagnostic angiography including an FFR investigation at 20 french centers (Oct. 2008-June 2010). Investigators were asked to define prospectively their revascularization strategy "a priori" based on angiography alone before performing the FFR. The final revascularization strategy, "reclassification" of the strategy by FFR, and 1-year clinical follow-up were prospectively recorded.
**Results:** 75% of patients were males with a mean age of 65±11 years. They had nonsignificant (< 50% stenosis) angiographic coronary artery disease (14%), significant (>50%) angiographic 1 vessel (39%), 2 vessel (28%) or 3 vessel disease (19%). The overall MACE (death, MI, revascularization) rate at 1 year was 11.6%. The "strategy a priori" based on angiography alone was medical therapy in 55% and revascularization in 45% (PCI=38% and CABG=7%). The final strategy applied according to FFR measurements was medical therapy in 58% and revascularization in 42% (PCI=32% and CABG=10%). However in individual patients, the final strategy based on the results of the FFR was different from the "strategy a priori" in 43% of the cases: This was observed in 33% of "a priori" medical patients, in 56% of "a priori" PCI patients and in 62% of "a priori" CABG patients. Interestingly, in "reclassified" patients who were treated based on the FFR and not on the angiography based "a priori" decision (n=464), the 1-year outcome was as good as in patients in whom the final decision concurred with the decision "a priori" (n=611, MACE= 11.2% vs. 11.9%, p=0.78).
**Conclusions:** This study demonstrates that the use of FFR during diagnostic angiography is associated with reclassification of the revascularization decision in about half of the patients. It further demonstrates that it is safe to pursue a revascularization strategy divergent to that suggested by angiography alone but guided by FFR measurements.

### TCT-80

**Applicability of hybrid strategy (resting index plus selective FFR) to assess hemodynamic significance of coronary stenoses depends on FFR distribution**

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**Background:** With FFR as the reference standard, a resting index (iFR or rest Pd/Pa) may offer high diagnostic accuracy for lesion subsets with high or low FFR. Selective FFR measurement for intermediate values of a resting index has been termed

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